

Naval Education and  
Training Command

NAVEDTRA 80330  
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Nonresident  
Training Course  
(NRTC)



# Aircrew Survival Equipmentman 1 & C

Only one answer sheet is included in the NRTC. Reproduce the required number of sheets you need or get answer sheets from your ESO or designated officer.

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# AIRCREW SURVIVAL EQUIPMENTMAN 1 & C

## NAVEDTRA 80330

Prepared by the Naval Education and Training Program Development  
Center, Pensacola, Florida

The text for this course is AIRCREW SURVIVAL EQUIPMENTMAN 1&C, NAVEDTRA 10330

Congratulations! By enrolling in this course, you have demonstrated a desire to improve yourself and the Navy. Remember, however, this self-study course is only one part of the total Navy training program. Practical experience, schools, selected reading, and your desire to succeed are also necessary to successfully round out a fully meaningful training program. You have taken an important step in self-improvement. Keep up the good work.

### HOW TO COMPLETE THIS COURSE SUCCESSFULLY

**ERRATA:** If an errata comes with this course, make all indicated changes or correction before you start any assignment. Do not change or correct the Rate Training Manual (RTM) or assignments in any other way.

**TEXTBOOK ASSIGNMENTS:** The RTM pages that you are to study are listed at the beginning of each assignment. Study these pages carefully before attempting to answer the questions in the course. Pay close attention to tables and illustrations because they contain information that will help you understand the text. Read the learning objective provided at the beginning of each chapter or topic in the text and/or preceding each set of questions in the course. Learning objectives state what you should be able to do after studying the material. Answering the questions correctly helps you accomplish the objective.

**BLACK DOT INFORMATION:** Black dots (●) may be used in the text and correspondence course to emphasize important or supplemental information and to highlight instructions for answering certain questions. Read these black dot entries carefully; they will help you answer the questions and understand the material.

**SELECTING YOUR ANSWERS:** After studying the text, you should be ready to answer the questions in the assignment. Read each question carefully, then select the BEST answer. Be sure to select your answer from the subject matter in the RTM. You may refer freely to the RTM and seek advice and information from others on problems that may arise in the course. However, the answers must be the result of your own work and decisions. You are prohibited from referring to or copying the answers of others and from giving answers to anyone else taking

the same course. Failure to follow these rules can result in suspension from the course and disciplinary action by the Commander, Naval Military Personnel Command.

**SUBMITTING COMPLETED ANSWER SHEETS:** It is recommended that you complete all assignments as quickly as practicable to derive maximum benefit from the course. However, as a minimum, your schedule should provide for the completion of at least one assignment per month--a requirement established by the Chief of Naval Education and Training. Failure to meet this requirement could result in disenrollment from the course.

**TYPES OF ANSWER SHEETS:** If you received Automatic Data Proceeding (ADP) answer sheets with this course, the course is being administered by the Naval Education and Training Program Development Center (NAVEDTRAPRODEVCCEN), and you should follow the instructions in paragraph A below. If you did NOT receive ADP answer sheets with this course, you should use the manually scored answer sheets attached at the end of the course and follow the direction contained in paragraph B below.

#### A. ADP Answer Sheets

All courses administered by the NAVEDTRAPRODEVCCEN include one blank ADP answer sheet for each assignment. For proper computer processing, use only the original ADP answer sheets. Reproductions are not acceptable.

**Recording Information on the ADP Answer Sheets:** Follow the "MARKING INSTRUCTIONS" on the answer sheet. Be sure that blocks 1, 2, and 3 are filled in correctly. This information is necessary for your course to be properly processed and for you to receive

credit for your work.

As you work the course be sure to mark your answers in the course booklet because your answer sheets will not be returned to you. When you have completed an assignment, transfer your answers from the course booklet to the answer sheet.

Mailing the Completed ADP Answer Sheets: As you complete each assignment, mail the completed ADP answer sheet to:

Commanding Officer  
Naval Education and Training  
Program Management  
Support Activity  
Pensacola, FL 32509-5000

The answer sheets must be mailed in envelopes, which you must either provide yourself or get from the local Educational Services Officer (ESO). You may enclose more than one answer sheet in a single envelope. Remember, regardless of how many answer sheets you submit at a time, the NETPMSA should receive at least one a month. NOTE: DO NOT USE THE COURSE COMMENTS PAGE AS AN ENVELOPE FOR RETURNING ANSWER SHEETS OR OTHER COURSE MATERIALS.

Grading: The NETPMSA will grade your answer sheets and notify you by letter of any incorrect answers. The passing score for each assignment is 3.2. Should you get less than 3.2 on any assignment, a blank ADP answer sheet will be enclosed with the letter listing the questions incorrectly answered. You will be required to redo the assignment and resubmit a new completed answer sheet. The maximum score that can be given for a resubmitted assignment is 3.2.

Course Completion: When you complete the last assignment, fill out the "Course Completion" form in the back of the course and enclose it with your last answer sheet. The NETPMSA will issue you a letter certifying that you satisfactorily completed the course. You should make sure that credit for the course is recorded in your service record.

Student Questions: Any questions concerning this course should be referred to the NETPMSA by mail using the address listed above or by telephone: AUTOVON 922-1771, or commercial (904) 452-1771.

#### B. Manually Scored Answer Sheets

If you did not receive ADP answer sheets with this course, it is being administered by your local command and you

must use the answer sheets attached at the end of the course booklet.

Recording Information on the Manually Scored Answer Sheets: Fill in the appropriate blanks at the top of the answer sheet. This information is necessary for your course to be properly processed and for you to receive credit for your work. As you work the course, be sure to mark your answers in the course booklet, because your answer sheets will not be returned to you. When you have completed an assignment, transfer your answers from the course booklet to the answer sheet.

Submitting the Completed Manually Scored Answer Sheets: As you complete each assignment, submit the completed answer sheet to your ESO for grading. You may submit more than one answer sheet at a time. Remember, you must submit at least one assignment a month.

Grading: Your ESO will grade the answer sheets and notify you of any incorrect answers. The passing score for each assignment is 3.2. Should you get less than 3.2 on any assignment, the ESO will not only list the questions incorrectly answered but will also give you a pink answer sheet marked "RESUBMIT." You will be required to redo the assignment and complete the "RESUBMIT" answer sheet. The maximum score that can be given for a resubmitted assignment is 3.2.

Course Completion: After you have submitted all the answer sheets and have earned at least a 3.2 on each assignment, your command will give you credit for this course by making the appropriate entry on Page 4 of your service record.

Student Questions: Any questions concerning the administration of this course should be referred to your ESO.

#### NAVAL RESERVE RETIREMENT CREDIT

This course is evaluated at 8 Naval Reserve retirement points. These points are creditable to personnel eligible to receive them under current directives governing retirement of Naval Reserve personnel. Points will be credited upon satisfactory completion of the entire course.

The date of completion for this course or units is the date processed through the NETPMSA ADP System, and not the day deposited in the mail. Answer sheets and "Course Completion" forms submitted by reserve personnel should be mailed at least 60 days prior to their anniversary date.

#### COURSE OBJECTIVE

While completing this nonresident career course, the student will demonstrate his understanding of course materials by correctly answering items on the following: oxygen test, stands, carbon dioxide transfer equipment, sewing machine repair and survival equipment training.

Naval courses may include several types of questions—multiple-choice, true-false, matching, etc. The questions are not grouped by type but by subject matter. They are presented in the same general sequence as the textbook material upon which they are based. This presentation is designed to preserve continuity of thought, permitting step-by-step development of ideas. Not all courses use all of the types of questions available. The student can readily identify the type of each question, and the action required, by inspection of the samples given below.

### MULTIPLE-CHOICE QUESTIONS

Each question contains several alternatives, one of which provides the best answer to the question. Select the best alternative, and blacken the appropriate box on the answer sheet.

#### SAMPLE

- s-1. Who was the first person appointed Secretary of Defense under the National Security Act of 1947?

1. George Marshall
2. James Forrestal
3. Chester Nimitz
4. William Halsey

Indicate in this way on the answer sheet:

	1	2	3	4	
	T	F			
s-1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---

### TRUE-FALSE QUESTIONS

Mark each statement true or false as indicated below. If any part of the statement is false the statement is to be considered false. Make the decision, and blacken the appropriate box on the answer sheet.

#### SAMPLE

- s-2. All naval officers are authorized to correspond officially with any systems command of the Department of the Navy without their respective commanding officer's endorsement.

1. True
2. False

Indicate in this way on the answer sheet:

	1	2	3	4	
	T	F			
s-2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---

### MATCHING QUESTIONS

Each set of questions consists of two columns, each listing words, phrases or sentences. The task is to select the item in column B which is the best match for the item in column A that is being considered. Items in column B maybe used once, more than once, or not at all. Specific instructions are given with each set of questions. Select the numbers identifying the answers and blacken the appropriate boxes on the answer sheet.

#### SAMPLE

In questions s-3 through s-6, match the name of the shipboard officer in column A by selecting from column B the name of the department in which the officer functions. Some responses may be used once, more than once, or not at all.

#### A. OFFICER

#### B. DEPARTMENT

- |                               |                           |
|-------------------------------|---------------------------|
| s-3. Damage Control Assistant | 1. Operations Department  |
| s-4. CIC Officer              | 2. Engineering Department |
| s-5. Disbursing Officer       | 3. Supply Department      |
| s-6. Communications Officer   |                           |

Indicate in this way on the answer sheet:

	1	2	3	4	
	T	F			
s-3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---
s-4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---
s-5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	---
s-6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---

## Assignment 1

Textbook Assignment: "Liquid Oxygen Converter Test Stand 59A120". Pages 1-1 through 1-11.

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<hr/> <p>Learning Objective: Recognize the operating characteristics and identify the maintenance requirements of the 59A120 liquid oxygen converter test stand.</p> <hr/>	
1-1. What rating level has the responsibility for maintaining liquid oxygen (LOX) converter test stands?	1-5. Weekly inspections are performed on the 59A120 test stand. These inspections may be broken down into operating hours. what total number of operating hours is considered a week?
1. E-3 and 4 2. E-4 and 5 3. E-5 and 6 4. E-6 and 7	1. 100 hr 2. 50 hr 3. 35 hr 4. 40 hr
1-2. Which of the following is NOT a part of the 59A120 test stand?	1-6. Which of the following inspections requires you to zero the test pressure gage?
1. Differential pressure gage 2. Linear flow element 3. Bell jar 4. Vacuum pump	1. Daily 2. Weekly 3. Monthly 4. Bimonthly
1-3. How many linear flow elements can be found on the 59A120 test stand?	1-7. At what Inspection interval is the relief valve set?
1. Six 2. Five 3. Three 4. Four	1. Daily 2. Weekly 3. Monthly 4. Every 6 months
1-4. When preparing the 59A120 test stand for use is divided into five separate tasks, which of the following tasks is NOT accomplished by the PR?	1-8. What is the calibration requirement time interval on the 59A120 test stand?
1. Installation 2. Visual inspection 3. Correction and preparation 4. Leakage testing	1. Weekly 2. Monthly 3. Every 6 months 4. Yearly
	1-9. Which of the following cleaning agents is used to clean external parts of the 59A120 test stand?
	1. MIL-C-81302, Type 1 2. MIL-C-6903A, Type 1 3. MIL-C-8939 4. MIL-C-2613

- 1-10. Where are the test adapters stored for the 59A120 test stand?
  1. In the storage compartment under the stand
  2. In the accessory tray
  3. Hung on the side of the test stand
  4. Inside the accessory toolbox
- 1-11. To remove dust and any foreign matter from the surfaces of the gage tester after removing the front panel on the 59A120 test stand, what maximum air pressure should you use?
  1. 10 psig
  2. 15 psig
  3. 25 psig
  4. 50 psig
- 1-12. When you are using air pressure for cleaning, all interconnecting pipes, hoses, and fittings must be cleaned with what maximum air pressure?
  1. 50 psi
  2. 160 psi
  3. 400 psi
  4. 500 psi
- 1-13. Which of the following chemicals is used to clean the terminals, of the Liquid Oxygen Quantity Gage Tester, on the 59A120 test stand?
  1. Type I Freon
  2. Type II Freon
  3. Type I dry cleaning solvent
  4. Type II dry cleaning solvent
- 1-14. Who is responsible for calibrating the 59A120 test stand?
  1. PRs, E-6 or above
  2. Personnel assigned to depot level maintenance
  3. On-site meteorology calibration team
- 1-15. What should you use to clean the O-ring that is installed in the bell jar?
  1. Distilled water
  2. Denatured alcohol
  3. Natured alcohol
  4. Mild soap and water
- 1-16. After you clean the O-ring on the bell jar, it should be lubricated with which of the following?
  1. MIL G 2489
  2. MIL G 27617
  3. MIL G 6903
  4. MIL G 2873
- 1-17. With of the following manuals gives information on the procedures for correction card preparation and calibration?
  1. NAVAIR 13-1-6.4
  2. NAVAIR 13-1-6.5
  3. NAVAIR 17-15BC-2
  4. NAVAIR 17-17CAL-2
- 1-18. Which of the following components does NOT require a correction card?
  1. PG-1
  2. PG-2
  3. FLM-1
  4. FLM-2
- 1-19. To prepare the correction cards, you must convert the actual liter-per-minute to
  1. indicated millimeters
  2. psig
  3. inches of water
  4. inches of mercury
- 1-20. After converting the actual liter-per-minute, at what time will you enter the indicated flows?
  1. When performing the leakage test
  2. When performing the daily test
  3. When calibrating the test stand
  4. Simultaneously
- 1-21. How many graphs are supplied with the calibration kit for the 59A120 test stand?
  1. One
  2. Two
  3. Three
  4. Four
- 1-22. How can you be sure that you have the right graphs for the test stand you are going to calibrate?
  1. The graphs will have the same serial numbers as the test stand
  2. The graphs are color coded
  3. All graphs are the same

- 1-23. When preparing the differential pressure gage correction card, you must connect the precision 0 to 100 in. H<sub>2</sub>O low-pressure gage to which of the following components?
1. Pressure gage calibration kit
  2. Relief valve
  3. Flowmeter 125-250 mm
  4. Bell jar bottom coupling
- 1-24. When you are preparing the differential pressure gage correction card, what initial pressure is used to compare the readings on the 0 to 100 in. H<sub>2</sub>O low-pressure gage and the differential pressure gage?
1. 25 in. H<sub>2</sub>O
  2. 50 in. H<sub>2</sub>O
  3. 100 in. H<sub>2</sub>O
- 1-25. To complete the differential pressure gage correction card after making the correction for 100 in. H<sub>2</sub>O, you must drop the pressure in what increments?
1. 10 in. H<sub>2</sub>O
  2. 20 in. H<sub>2</sub>O
  3. 25 in. H<sub>2</sub>O
- 1-26. To prepare the test pressure gage correction card, you must connect the bell jar bottom coupling to which of the following precision gages?
1. 0 to 100 psig
  2. 0 to 200 psig
  3. 0 to 500 psig
  4. Differential pressure gage
- 1-27. The pointer of the low-pressure test gage can be adjusted by which of the following methods?
1. Turning the adjustment screw on the back of the gage
  2. Turning the adjustment screw on the front of the gage
  3. Opening the oxygen supply valve
  4. Closing the oxygen supply valve
- 1-28. When preparing the correction card for the low-pressure test gage, you must use the bleed valve to reduce the pressure indicated on the precision-0-to-200-psig pressure test gage. What maximum increments are used to reduce the indicated pressure?
1. 2 psig
  2. 5 psig
  3. 25 psig
  4. 50 psig
- 1-29. When preparing the correction card for the low-pressure gage, you make your first correction reading at 14 psig. How many other readings are required?
1. Five
  2. Two
  3. Six
  4. Four
- 1-30. When preparing the linear flow element correction cards, you should start with which of the following lpm flow elements?
1. 0 to 50
  2. 0 to 100
  3. 0 to 150
  4. 0 to 200
- 1-31. By setting the oxygen supply valve V-6 to 150 lpm on the 500- to 750-mm calibration kit flow element, the flow, in. H<sub>2</sub>O, will be displayed on which of the following flowmeter indicators?
1. PG-1
  2. PG-2
  3. PG-3
  4. PG-4
- 1-32. Upon completion of any maintenance action on the 59A120 test stand, you must complete which of the following forms?
1. Ground Support Equipment Subcustody and Periodic Maintenance Record (OPNAV 4790/50)
  2. Ground Support Equipment Custody and Maintenance Record (OPNAV 4790/51)
  3. both 1 and 2 above
  4. VIDS/MAF
- 1-33. Which of the following manuals contains information on the 59A120 test stand?
1. NAVAIR 17-15BC-20
  2. NAVAIR 17-18BC-30
  3. NAVAIR 13-5-501
  4. OPNAV 4790.2A
- 1-34. Who has the responsibility to repair a defective flow element that consistently reads low?
1. Only personnel of the PR rate
  2. Only E-6 and above personnel of the PR rate
  3. Local AIMD personnel assisted by the calibration team

- 1-35. Which, if any, of the following gages, reads pressure applied to the item under test on the 59A120 test stand?
1. DF-1, 0 to 100 H<sub>2</sub>O
  2. PG-1, 0 to 160 psig
  3. PG-4, 0 to 15 psig
  4. None of the above
- 1-36. When you are testing the accessories section for leakage, a leak will be indicated on which of the following gages?
1. PG-1
  2. PG-2
  3. PG-3
- 1-37. When you test the accessories section on the 59A120 test stand, what is the allowable leakage?
1. 2 psig in 10 min
  2. 5 psig in 10 min
  3. 2 psig in 15 min
  4. 5 psig in 15 min
- 1-38. The relief valve V-11 shall relieve at no more than how many psig?
1. 50
  2. 90
  3. 110
  4. 120
- 1-39. The relief valve V-11 shall be leak tight at what minimum psig?
1. 50
  2. 90
  3. 100
  4. 110
- 1-40. In order to bleed the accessory section of the 59A120, which of the following valves is used?
1. V-11
  2. V-6
  3. V-5
  4. V-1
- 1-41. Any time the 0 to 160 psig pressure gage pegs, it is caused by which of the following parts?
1. Supply cylinder
  2. Supply pressure gage DF-1
  3. Pressure regulator R-2
  4. Pressure regulator R-1
- 1-42. With 1800 psi supply pressure applied, the pressure regulator R-1 is set to maintain what maximum pressure?
1. 110 psig
  2. 120 psig
  3. 140 psig
  4. 160 psig
- 1-43. When operating valves V-2, V-5, V-6, V-7, and V-10 on the 59A120 test stand, you should be cautious when closing them because they are manufactured from soft aluminum.
1. True
  2. False
- 1-44. Before attempting to set the pressure on the R-1 regulator, you must first loosen which of the following parts?
1. Needle valve on the top of the regulator
  2. Needle valve on the left side of the regulator
  3. Needle valve on the right side of the regulator
  4. Hex nut on the front of the regulator
- 1-45. What is the pressure range of the low-pressure test gage (PG-4) on the 59A120?
1. 0 to 15 psig
  2. 0 to 50 psig
  3. 0 to 100 psig
  4. 0 to 500 psig
- 1-46. What type of a gage is the 0-100-in. H<sub>2</sub>O differential pressure gage?
1. An aneroid operated
  2. A bellows operated
  3. A spring operated
  4. A gravity operated
- 1-47. The purpose of the low-pressure test gage is to read
1. pressure from the bell jar
  2. extremely low pressure from the item under test
  3. the relief valve pressure
  4. leakage of the relief valve

1-48. The low-pressure test gage is protected by a gage guard set at what pressure range?

1. 5 to 11 psig
2. 5 to 15 psig
3. 11 to 14 psig
4. 10 to 15 psig

1-49. If you have a 59A120 test stand that the differential pressure gage (DF-1) indicates low readings, your problem would most likely be located in which of the following areas?

1. Shut off differential pressure valve (V-8)
2. Low-pressure shut off valve
3. 0 to 160 psig oxygen pressure regulator (PG-4)
4. Differential pressure bleed valve (V-7)

1-50. The relief valve located in the bell jar has a range of






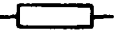






1. 3 to 5 psig
2. 5 to 7 psig
3. 5 to 15 psig
4. 110 to 120 psig

1-51. When you replace tubing on a 59A120 test stand, what is the minimum wall thickness for tubing used on high-pressure tubing?

1. 025
2. 032
3. 049
4. 052

## Assignment 2

Textbook Assignment: "Oxygen Component Test Stand (1172AS100)." Pages 2-1 through 2-16.

- 
- |   |  |
|---|--|
| <p>Learning Objective: Recognize the capabilities, operational characteristics and leakage within systems, and associated maintenance procedures for the 1172 AS 100 oxygen system component test stand.</p> <hr/> <p>2-1. Who has the responsibility for maintaining the 1172 AS 100 test stand?</p> <ol style="list-style-type: none"> <li>1. Senior PR</li> <li>2. Ground support personnel</li> <li>3. Calibration lab team</li> </ol> <p>2-2. Which of the following test stands is used to test oxygen regulators?</p> <ol style="list-style-type: none"> <li>1. OTS 59A 120</li> <li>2. OTS 31-15</li> <li>3. 1172 AS 100</li> <li>4. 135562A</li> </ol> <p>2-3. Detailed instructions for periodic inspections for the 1172 AS 100 can be found in which of the following manuals?</p> <ol style="list-style-type: none"> <li>1. Aircrew Survival Equipmentman 3&amp;2 Vol 2</li> <li>2. NAVAIR 13-1-6.4</li> <li>3. Both 1 and 2 above</li> <li>4. NAVAIR 13-1-6.5</li> </ol> <p>2-4. How many different systems are incorporated within the 1172 AS 100 test stand?</p> <ol style="list-style-type: none"> <li>1. 5</li> <li>2. 7</li> <li>3. 9</li> <li>4. 12</li> </ol> | <p>2-5. Which of the following symbols identifies a one-way check valve?</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1. </p> <p>2. </p> </div> <div style="text-align: center;"> <p>3. </p> <p>4. </p> </div> </div> <p>2-6. Which of the following symbols identifies a line trap?</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1. </p> <p>2. </p> </div> <div style="text-align: center;"> <p>3. </p> <p>4. </p> </div> </div> <p>2-7. Which of the following symbols identifies a Vol-O-Flo element?</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1. </p> <p>2. </p> </div> <div style="text-align: center;"> <p>3. </p> <p>4. </p> </div> </div> <p>2-8. Before attempting to operate the 1172 AS 100 test stand, which of the following actions must you perform?</p> <ol style="list-style-type: none"> <li>1. Secure all the valves before opening the supply cylinder</li> <li>2. Position the high-pressure regulator to LOAD then turn to VENT</li> <li>3. Ensure the low-pressure regulator is bled out</li> <li>4. All of the above</li> </ol> |
|---|--|

- 2-9. During which leakage test is supply nitrogen pressure tested for leakage?
1. Inward leakage
  2. Outward leakage
  3. Rotameter leakage
  4. Differential leakage
- 2-10. How often do you perform the outward leakage test?
1. Daily
  2. Biweekly
  3. Weekly
  4. Monthly
- 2-11. To test for leakage on the supply pressure gage, you should pressurize the gage and wait 2 minutes. How much leakage, if any, is allowed?
1. 5 psi
  2. 10 psi
  3. 15 psi
  4. None
- 2-12. What is the minimum pressure range of the regulated high-pressure system?
1. 0 psig
  2. 100 psig
  3. 250 psig
  4. 500 psig
- 2-13. The gage guard that protects the low-range and high-range leakage rotameters is set to relieve at what maximum pressure?
1.  $50 \pm 5$  psig
  2.  $170 \pm 5$  psig
  3.  $180 \pm 5$  psig
  4.  $250 \pm 10$  psig
- 2-14. Which of the following gages indicates the gage guard pressure that protects the low-range and high-range rotameters?
1. Regulated low-pressure gage
  2. Regulated high-pressure gage
  3. Supply gage
  4. Differential pressure gage
- 2-15. When testing the regulated high-pressure system, you determine that there is a leak in one of your ON/OFF valves. The leak will be indicated on which of the following gages?
1.  $N_2$  inlet pressure gage
  2.  $N_2$  outlet pressure gage
  3. Differential pressure gage
- 2-16. To bleed the regulated high-pressure system, you should use which of the following valves or regulators?
1. High-pressure regulator only
  2. System bleed valve only
  3. Both 1 and 2 above
  4. Inlet bleed valve
- 2-17. To check the regulated high-pressure system for leaks, you should turn the supply cylinder ON. This pressure can be read on which of the following gages?
1. Low-pressure gage
  2. High-pressure gage
  3. Both 1 and 2 above
  4. Differential pressure gage
- 2-18. When testing the high pressure system for leaks, what period of time must you wait before reading and rereading the high-pressure gage?
1. 1 min
  2. 2 min
  3. 3 min
  4. 5 min
- 2-19. What is the minimum pressure range of the regulated low-pressure nitrogen system?
1. 0 to 180 psig
  2. 0 to 250 psig
  3. 0 to 500 psig
  4. 0 to 1800 psig

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Learning Objective: Identify the test stand used to test LOX converters, test stand inspections, internal parts, and general maintenance.

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- 2-20. The purpose of the regulated low-pressure nitrogen system is to supply nitrogen to which of the following components?
1. N<sub>2</sub> input connection
  2. In-system leakage rotameters
  3. Both 1 and 2 above
  4. N<sub>2</sub> output connection
- 2-21. When you are testing the regulated low-pressure system for leaks, what action determines a leak is present?
1. The low-pressure gage drops
  2. The low-pressure gage rises
  3. The ball in the high-range leakage rotameter rises
  4. The ball in the low-range leakage rotameter rises
- 2-22. When the low-pressure regulator indicates 160 psig, what should the N<sub>2</sub> input pressure gage be reading?
1. 70 psig
  2. 120 + 5 psig
  3. 145 ± 5 psig
  4. 160 psig
- 2-23. When making bleed adjustments to a 20004 miniature regulator, You should use which of the following systems?
1. Input
  2. Rotameter
  3. output
  4. Regulated low-pressure
- 2-24. How many rotameters are incorporated in the rotameter system?
1. One
  2. Two
  3. Three
  4. Four
- 2-25. Which of the following types of leakage tests requires you to connect the low-pressure connection (19) and the 200 ccm leakage connection (20) together by using the line with two bayonet fittings?
1. Leakage between the low-pressure and rotameter system
  2. Leakage between the high-pressure and rotameter system
  3. Leakage through the leakage control valve (E)
  4. Leakage through the supply shut off valve
- 2-26. Which of the following connections is NOT located inside the pressure chamber?
1. Low-pressure connection
  2. 200-ccm leakage connection
  3. Reference tap connection
  4. Differential pressure connection
- 2-27. To pressurize the differential pressure system for a leakage test, you open the leakage control valve until it reaches how many inches of water on the pressure/suction manometer?
1. 5 in.
  2. 9 in.
  3. 12 in.
  4. 18 in.
- 2-28. Leakage in the differential pressure system will be indicated on which of the following gages?
1. Pressure/auction rotameter
  2. High-range leakage rotameter
  3. Low-pressure leakage rotameter
  4. All of the above
- 2-29. The differential pressure indicating system is used to perform which of the following tests?
1. Safety-pressure
  2. Pressure breathing
  3. Flow suction
  4. All of the above
- 2-30. How many manometers are used on the test stand to indicate differential pressure?
1. One
  2. Two
  3. Three
  4. Four
- 2-31. Which of the following valves or connections affect(s) readings on the pressure suction manometer?
1. Helmet reference tap
  2. Suit simulator reference tap
  3. Pressure equalizer valve
  4. All of the above

- 2-32. 1.0 psig is equal to how many inches of H<sub>2</sub>O?
1. 8.5
  2. 9.0
  3. 20.0
  4. 27.7
- 2-33. 1.0 psig is equal to how many inches of HG?
1. 5 in.
  2. 2 in.
  3. 3 in.
  4. 4 in.
- 2-34. To test the differential pressure indicating system, you must apply how many inches of H<sub>2</sub>O to the system?
1. 16 in.
  2. 18 in.
  3. 20 in.
  4. 24 in.
- 2-35. Pressure applied to the differential pressure system can be read on which of the following component?
1. Pressure/suction manometer
  2. High-pressure gage
  3. Low-pressure gage
  4. Inclined flowmeter
- 2-36. Leakage in the differential pressure system will be indicated on which of the following components?
1. High-range flowmeter
  2. Low-range flowmeter
  3. Both 1 and 2 above
  4. Pressure/suction manometer
- 2-37. How should you bleed the differential pressure system?
1. Back out on the low-pressure regulator and open the bleed valve
  2. Back out on the high-pressure regulator and open the bleed valve
  3. Turn in on the low-pressure regulator and open the bleed valve
  4. Turn in on the high-pressure regulator and open the bleed valve
- 2-38. Which of the following systems is considered the heart of the test stand?
1. Vacuum system
  2. Differential system
  3. Rotameter system
  4. Nitrogen system
- 2-39. Which of the following valves allows a direct evacuation of the chamber?
1. Cutput valve
  2. Vacuum control valve
  3. Bypass valve
- 2-40. Which of the following valves draws a flow through the item under test?
1. Output valve
  2. Vacuum valve
  3. Input valve
- 2-41. The vacuum system is checked at which of the following altitudes?
1. 5,000 feet
  2. 10,000 feet
  3. 20,000 feet
  4. 50,000 feet
- 2-42. Atmosphere, as a unit of pressure, is equal to what total number of pounds per square inch?
1. 6.9
  2. 12.5
  3. 14.69
  4. 27.0
- 2-43. At what altitude do you perform the leakage test of the altitude sensing system?
1. 10,000 feet
  2. 20,000 feet
  3. 50,000 feet
  4. 150,000 feet
- 2-44. To indicate a leak is present when testing the chamber bleed system for leaks, you will receive a drop in
1. supply pressure
  2. regulated low pressure
  3. regulated high pressure
  4. altitude

2-45. Which of the following systems is the largest and most important system in the operation of the 1172 AS 100 test stand?

1. Vacuum
2. System bleed
3. Flow measuring
4. Differential pressure

2-46. Where does the output flow system originate?

1. Prizometer
2. Flow selector valve
3. Vol-O-Flow element

2-47. Output flow systems can be used only with the chamber at altitude.

1. True
2. False

2-48. The input flow system originates at the

1. prizometer
2. flow selector valve
3. suit simulator
4. air intake

2-49. Which of the following systems originates at either the vent ambient valve or the vent pressure valve?

1. Vent flow
2. Differential pressure
3. Vol-O-Flow
4. Bleed

2-50. To use the flow measuring system, you must convert liters-per-minute to which of the following measurements?

1. In. H<sub>2</sub>O
2. Psig
3. In. Hg

2-51. At what altitude & you perform the leak test for the flow measuring system?

1. Sea level
2. 5,000 feet
3. 10,000 feet
4. 15,000 feet

### Assignment 3

Textbook Assignment: "Carbon Dioxide Transfer Equipment." Pages 3-1 through 3-13.

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<hr/> <p>Learning Objective: Relative to CO<sub>2</sub> transfer equipment, recognize their components, construction and operating features, and servicing and maintenance procedures, including the replacement of packings and safety disc.</p> <hr/>	
3-1.	Which of the following companies manufacture(s) CO <sub>2</sub> transfer pumps?  1. C-O-Two Fire Equipment 2. Walter Kidde 3. Both 1 and 2 above 4. Bendix Engineering
3-2.	Which of the following methods is used to take up any slack in the drive belt on a SC-5 CO <sub>2</sub> transfer unit?  1. Adjust the adapter on the drive pulley 2. Slide the motor on the adjustable base 3. Replace the drive belt 4. Adjust the drive shaft
3-3.	The SC-5 CO <sub>2</sub> pump is designed to work with a pressure of how many pounds per square inch?  1. 2000 2. 2750 3. 3000 4. 3500
3-4.	The SC-5 CO <sub>2</sub> Transfer pump will transfer approximately how many pounds of CO <sub>2</sub> out of a full supply cylinder?  1. 38 lb 2. 50 lb 3. 80 lb 4. 100 lb
3-5.	How many pounds of CO <sub>2</sub> are there in a standard supply cylinder?  1. 38 lb 2. 40 lb 3. 50 lb 4. 100 lb
3-6.	The SC-5 pump has a flangeable safety disc that is designed to release pressure in the pump at what maximum pressure range?  1. 2050 to 2100 psig 2. 2250 to 2300 psig 3. 2500 to 3000 psig 4. 2650 to 3000 psig
3-7.	What prevents any recoil in the event the safety disc ruptures?  1. Recoil valve 2. Safety valve 3. Safety disc nut 4. Defuser
3-8.	The SC-5 CO <sub>2</sub> pump requires which of the following types of oil?  1. 10 W 40 2. 10 W 30 3. SAE 20 4. SAE 30
3-9.	Which of the following motors is standard equipment on the SC-5 transfer unit?  1. 1/2 horsepower 2. 1 horsepower 3. 1 1/2 horsepower 4. 2 horsepower

- 3-10. When adding oil to the SC-5 CO<sub>2</sub> transfer pump that does not have a dip stick, you should fill the crankcase with oil to what level?
1. One-eighth of an inch from the top of the cup
  2. One-fourth of an inch from the top of the cup
  3. To the fourth thread
  4. To the first thread
- 3-11. Other than the crankcase, how many different lubrication points are required on the SC-5 transfer unit?
1. One
  2. Two
  3. Three
  4. Four
- 3-12. When lubricating the idler gear and the puny shaft, you should use what type of lubricant?
1. SAE 20 oil
  2. SAE 30 oil
  3. Vaseline
  4. Light cup grease
- 3-13. Motor bearings contain enough grease to keep the bearings lubricated for approximately how long?
1. 1 year
  2. 2 years
  3. 30 days
  4. 6 months
- 3-14. If it is necessary to wire the SC-5 CO<sub>2</sub> pump for 220 power, where can you find information on the wiring diagram?
1. In NAVAIR 13-1-6.1
  2. In NAVAIR 13-1-6.2
  3. In OPNAV 5510.1E
  4. On the pump's nameplate
- 3-15. If you are required to change the electrical plug on a SC-5 CO<sub>2</sub> unit, the ground wire is which of the following colors?
1. Red
  2. Green
  3. White
- 3-16. Carbon dioxide is stored under (a) what pressure and (b) at what temperature?
1. (a) 850 psig (b) 70°F
  2. (a) 1800 psig (b) 70°F
  3. (a) 2900 psig (b) 60°F
  4. (a) 3000 psig (b) 60°F
- 3-17. What is the purpose for running-in a new pump or one that has been idle for a long time?
1. To check for lubrication
  2. To check for leaks of CO<sub>2</sub>
  3. To loosen the bearing packings
  4. To tighten the bearing packings
- 3-18. Which of the following wrenches is used to tighten fittings and connections on the C-O-Two unit?
1. A 10-inch wrench
  2. A 12-inch wrench
  3. A pipe wrench (13 inches)
  4. A crescent wrench (13 inches)
- 3-19. Which of the following statements concerning a supply cylinder is NOT true?
1. A supply cylinder weighs 50 pounds
  2. The maximum capacity of a supply cylinder is 50 pounds
  3. 10 pounds of the contents may be gaseous
  4. 40 pounds of the contents may be liquid
- 3-20. A cool supply cylinder will transfer its contents more efficiently than a warm one.
1. True
  2. False
- 3-21. The time required to charge an empty cylinder increases with increased temperature of the cylinder.
1. True
  2. False
- 3-22. A large cylinder will recharge faster if it is placed in an upright position.
1. True
  2. False
- 3-23. To prevent expansion of CO<sub>2</sub> in the supply hose, the valve should have an opening of at least
1. 1/8 inch
  2. 1/4 inch
  3. 3/4 inch
  4. 1 inch

- 3-24. How often is the idler shaft lubricated?
1. Every 30 days
  2. Every 6 months
  3. Every year
  4. Every 2 years
- 3-25. Gear teeth should be lubricated with
1. a thin coating of light cup grease
  2. a thick coating of light cup grease
  3. SAE 30 motor oil
  4. a thin coating of Vaseline
- 3-26. The piston rod should be lubricated every 6 months with a light coating of
1. light cup grease
  2. Vaseline
  3. gear grease
  4. SAE 30 motor oil
- 3-27. What should you use to clean the motor commutator on the Sc-5 CO<sub>2</sub> transfer unit?
1. A dry piece of lint-free cloth
  2. A piece of cloth dipped in dry cleaning solvent
  3. Freon Type II
  4. Freon Type I
- 3-28. How often should you change the oil in the crankcase of the Sc-5 CO<sub>2</sub> transfer pump?
1. Every 10 days
  2. Every 21 days
  3. Annually
  4. Every 2 years or biannually
- 3-29. What procedure must you use to lubricate the bearing housing on the electric motor?
1. Use a grease gun
  2. Disassemble the complete unit
  3. Disassemble the bearing housing
- 3-30. The electric motor bearings should be lubricated every 2 years. Before lubricating the bearings, you should clean them with
1. carbon tetrachloride
  2. toluene
  3. Stoddard solvent
  4. dry cleaning agent
- 3-31. How much grease should you apply to each bearing?
1. 1 or 2 shots of light cup grease
  2. Add grease until it flows freely from grease cups
  3. One-half ounce of grease
  4. 1 ounce of grease
- 3-32. When should you replace the piston rod packing on the SC-5 transfer pump?
1. Every 250 operating hours
  2. Every 500 operating hours
  3. Yearly
  4. Every 2 years
- 3-33. What is the purpose of the flanged-type packing nut?
1. It serves only to hold the pecking in place
  2. It is used to reduce leaks in the packing
  3. It is used as an adjustment for proper CO<sub>2</sub> pressure
- 3-34. The Walter Kidde transfer unit comes with which of the following motors?
1. One-fourth horsepower
  2. One-half horsepower
  3. Three-fourths horsepower
  4. 1 horsepower
- 3-35. The safety disc used in the Walter Kidde pumps has a range of
1. 2500 to 2750 psi
  2. 2650 to 3000 psi
  3. 2750 to 3000 psi
  4. 2900 to 3000 psi
- 3-36. The motor for the Walter Kidde transfer unit operates at
1. 550 rpm
  2. 1500 rpm
  3. 1750 rpm
  4. 2000 rpm
- 3-37. The multibreaker on the Walter Kidde unit is designed to protect the unit. It operates on what total number of amperes?
1. 5 amp
  2. 15 amp
  3. 20 amp
  4. 30 amp

- 3-38. How is the multibreaker reset on a Walter Kidde unit?
1. By replacing the blown fuse
  2. By resetting the breaker box
  3. By turning the ON/OFF switch to OFF then to ON
- 3-39. Which motor oil is used in the crankcase of the Walter Kidde unit?
1. SAE 10 W 40
  2. SAE 10
  3. SAE 20
  4. SAE 30
- 3-40. Which of the following directive take precedence over the procedures outlined in the manufacturer manual?
1. OPNAV
  2. NAVAIRSYSCOM
  3. 4790.2B
- 3-41. What size wrench is recommended by Walter Kidde to tighten connecting joints?
1. 6 in.
  2. 8 in.
  3. 10 in.
  4. 12 in.
- 3-42. How often should you change the oil in the Walter Kidde crankcase?
1. After 150 hours of operation
  2. After 500 hours of operation
  3. Every year
  4. Every 2 years
- 3-43. How much oil does the Walter Kidde crankcase hold?
1. 1 pint
  2. 2 pints
  3. 1 quart
  4. 2 quarts
- 3-44. If a leak should develop at the lower end of the plunger on the Walter Kidde unit, what type of tool should you use to correct the problem?
1. A special rod approximately 3/8 inch x 6 inches
  2. A special rod approximately 1/2 inch x 6 inches
  3. A one-half inch box end wrench
  4. A three-eighths inch box end wrench
- 3-45. The ICC requirement for testing a CO<sub>2</sub> cylinder requires that the cylinder be tested at what pressure?
1. Twice the working pressure
  2. Three times the working pressure
  3. Five-thirds the working pressure
- 3-46. How often should a cylinder be hydrostatically tested?
1. Every 5 years
  2. Every 2 years
  3. Every 3 years
  4. Every 7 years
- 3-47. Winterized extinguishers can be identified by
1. yellow dots three-fourths of an inch on opposite sides of each other
  2. one three-fourths of an inch yellow dot on the shoulder of the cylinder
  3. two black dots
  4. a 1-inch yellow band
- 3-48. How much nitrogen is required to winterize a CO<sub>2</sub> cylinder?
1. 100 psi
  2. 200 psi
  3. 300 psi
  4. 400 psi
- 3-49. What maximum temperature can a winterized cylinder be subjected to without rupturing the safety disc?
1. 80°F
  2. 110°F
  3. 150°F
  4. 160°F
- 3-50. To replace a safety disc on F/U-6/P cylinder, you need a torque wrench, a five-sixteenth inch socket and a
1. piece of hex stock 5/16 x 2 inches
  2. 3/8 x 6 inches rod
  3. 1/2 x 6 inches rod

## Assignment 4

Textbook Assignment: "Sewing Machine Repair." Pages 4-1 through 4-37.

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<hr/> <p>Learning Objective: Recognize maintenance responsibilities in troubleshooting, repairing, and replacing parts of the Class 111 sewing machine.</p> <hr/>		4-5.	The 111 W 155 sewing machine may be operated to what maximum number of stitches per minute (SPM)?
			1. 2200 2. 2800 3. 3500 4. 4000
4-1.	The single needle, rotary axis 111 W 155 sewing machine makes which of the following federal standard stitches?	4-6.	The 111 W 155 sewing machine has a stitch per inch (SPI) range of
	1. 103 2. 200 3. 301 4. 400		1. 3 1/2 to 30 2. 5 to 32 3. 3 1/2 to 32 4. 5 to 30
4-2.	Which of the following sewing machines is NOT suited for sewing medium-heavy fabrics?	4-7.	What component holds the material as the needle is raised and moves forward for another bight?
	1. Singer 111 W 155 2. Juki LU-562 3. Consew 225 4. Singer 31-15		1. Feed dogs 2. Vibrating presser 3. Feed eccentric 4. Lifting presser
4-3.	The 111 W 155 sewing machine features a <u>rotary axis</u> ; to what component does this term apply?	4-8.	In which direction will the 111 W 155 sewing machine move the fabric being sewed?
	1. Safety clutch 2. Arm shaft 3. Sewing hook 4. Feed eccentric		1. Toward the operator 2. Away from the operator 3. Either toward or away from the operator, depending on the setting of the feed drive eccentric
4-4.	The feeding action of the 111 W 155 sewing machine allows which components to move in unison?	4-9.	The 111 W 151 sewing machine has a stitch per inch (SPI) range of
	1. The lifting presser foot, the pinion gear, and the feed dogs 2. The vibrating presser, the needle, and the feed dogs 3. The lifting presser, the needlebar, and the feed dogs 4. The vibrating presser, the lifting presser, the needle, and the feed dogs		1. 3 1/2 to 30 2. 5 to 32 3. 3 1/2 to 32 4. 5 to 30

- 4-10. What is the maximum presser foot lift for the 111 W 155 sewing machine?
1. One-half in.
  2. One-eighth in.
  3. Three-fourths in.
  4. Three-sixteenths in.
- 4-11. What is the maximum presser foot lift for the 111 W 151 sewing machine?
1. One-half in.
  2. Three-eighths in.
  3. Three-fourths in.
  4. Three-sixteenths in.
- 4-12. The 111 W 155 and 111 W 151 are similar in most features EXCEPT that the 111 W 151 has only one
1. feed drive eccentric
  2. presser foot
  3. oiling point
  4. feed dog
- 4-13. An accumulation of dust and lint will cause the same sluggish operation problem as a loose puny belt.
1. True
  2. False
- 4-14. New sewing machines should be cleaned to remove corrosion preventive substances that were applied at the factory. What substance is used to remove corrosion preventive substances?
1. Stoddard solvent
  2. Freon 113
  3. Diesel fuel
  4. JP-5
- 4-15. After using a sewing machine, you should clean and oil it.
1. True
  2. False
- 4-16. Compressed air should never be used to clean a sewing machine.
1. True
  2. False
- 4-17. An excessive amount of oil on the working parts of any sewing machine will probably result in which of the following conditions?
1. The oil will dry out and cause grease to form on friction surfaces
  2. The oil will drip on materials being sewn and soil the project
  3. The oil will accumulate in the drip pan and overflow on the drive motor
  4. The oil will cause condensation that will drip into the drive motor
- 4-18. Hard to reach places on the sewing machine may be cleaned with
1. a medium soft bristle brush only
  2. low pressure air only
  3. a medium soft bristle brush and low pressure air
- 4-19. At what minimum interval should sewing machines be given a through cleaning and oiling?
1. Every 3 mo
  2. Every 6 mo
  3. Every 12 mo
  4. Every 18 mo
- 4-20. A clean dust cloth should be used to clean all sewing machine parts EXCEPT the
1. head
  2. oil pan
  3. motor casing
  4. arm shaft
- 4-21. If unable to obtain the recommended types of oil required by the manufacturer, you may use which of the following oils as a substitute?
1. Cod oil
  2. Turbine oil
  3. Mineral oil
  4. STP oil treatment
- 4-22. Continual malfunction of a sewing machine is most likely caused by which of the following conditions?
1. Electrical lead unplugged
  2. Out of timing sequence
  3. Lack of lubrication
  4. Drive motor wired backwards

- 4-23. Complete disassembly of the 111 W 155 sewing machine is necessary to properly set the timing sequence.
1. True
  2. False
- 4-24. When the arm shaft is timed with the hook drive shaft, it is necessary to turn the balance wheel toward the operator until which of the following components reaches its highest position?
1. Bell crank
  2. Needlebar
  3. Thread take-up lever
  4. Drive belt
- 4-25. In timing the arm shaft with the hook drive shaft, you must align the timing mark on the timing plate with the timing mark on which of the following components?
1. Hook drive shaft
  2. Arm shaft
  3. Feed drive shaft
  4. Pinion gear
- 4-26. After timing the arm shaft with the hook drive shaft, you should perform which of the following actions?
1. Set the hook to the needle
  2. Install the connection belt pulley
  3. Set the feed dogs
  4. Install the motor drive belt
- 4-27. Centering the feeding action on the 111 W 155 sewing machine is accomplished by ensuring that the feed dogs do NOT strike the throat plate.
1. True
  2. False
- 4-28. Which of the following actions prevent(s) the needle from wandering from side to side?
1. Ensuring the needlebar rock frame hinge stud is tight
  2. Ensuring the needlebar rock frame guide bracket is tight
  3. Both 1 and 2 above
  4. Ensuring the needlebar is properly timed and tight
- 4-29. To set the 111 W class sewing machine to its maximum stitch length, which of the following actions is required?
1. Depress the plunger and turn the balance wheel toward the operator
  2. Depress the plunger and turn the balance wheel away from the operator
  3. Push the stitch regulator lever all the way down
  4. Push the stitch regulator lever all the way up
- 4-30. Which of the following actions allows you to adjust the movement of the feed dogs?
1. Loosen the feed dog fork
  2. Loosen the feed driving crank pinch screw
  3. Remove the throat plate
  4. Remove the feed driving cam
- 4-31. To time the sewing hook and the needlebar on the sewing machine, you should remove which of the following parts?
1. Throat plate
  2. Feed dogs
  3. Presser foot
  4. All of the above
- 4-32. Which of the following methods should you use to adjust the hook guard?
1. Loosen the two screws and move the hook guard left or right
  2. Move the adjusting screw clockwise
  3. Bend the hook guard washer
- 4-33. Which of the following parts prevents the needle from striking the sewing hook ?
1. Safety clutch
  2. Hook gib
  3. Hook guard
  4. Hook pinion gear
- 4-34. Which of the following parts controls the feeding motion provided by the alternating pressers?
1. Feed driving cam
  2. Feed driving rock shaft
  3. Pressure lifting cam
  4. Pressure lifting eccentric

- 4-35. When timing the pressure lifting eccentric, you should set the sewing machine at
1. 3 1/2 SPI
  2. 5 SPI
  3. 8 SPI
  4. 32 SPI
- 4-36. What is the purpose of the thread controller spring?
1. It prevents the bobbin thread from breaking
  2. It prevents the upper thread from breaking
  3. It prevents the sewing hook from piercing the thread
  4. It prevents the needle from piercing the thread
- 4-37. Which of the following statements concerning the thread controller spring is correct?
1. It rests on the thread controller spring stop as the point of the needle enters the material
  2. It rests on the thread controller spring stop as the needle reaches its highest point
  3. It prevents the bobbin thread from jamming under the throat plate
- 4-38. When adjusting the thread tension and you cannot properly adjust it with the upper thread tension disc, what action should you take?
1. Change the size of thread
  2. Change the needle size
  3. Adjust the bobbin tension
  4. Adjust the presser foot tension
- 4-39. If your machine is hard to turn after you time and adjust it, which of the following actions must be performed first?
1. Check the feeding action
  2. Remove the arm shaft connection belt
  3. Remove the throat plate and set the stitches to zero
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- Learning Objective: Identify the functions, adjustments, timing and general maintenance applicable to the 31-15 sewing machine.
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- 4-40. Which of the following is an oscillating type sewing machine?
1. 31-15
  2. 331K1
  3. Consew C-30
  4. Each of the above
- 4-41. The 31-15 sewing machine will sew canvas up to
1. 4 oz
  2. 6 oz
  3. 8 oz
  4. 10 oz
- 4-42. What is the stitch range on the Consew C-30?
1. 5 to 30 SPI
  2. 7 to 32 SPI
  3. 5 to 27 SPI
  4. 7 to 27 SPI
- 4-43. What is the clearance between the presser foot and the throat plate at the 31-15 sewing machine?
1. One-fourth in.
  2. One-eighth in.
  3. Seven-sixteenths in.
  4. Five-sixteenths in.
- 4-44. Which of the following is the main timing point on a 31-15 sewing machine?
1. Hook drive gear
  2. Hook pinion gear
  3. Needlebar
  4. Balance wheel
- 4-45. When you set the needlebar and it starts its upstroke, what is the distance of the hook in relation to the eye of the needle?
1. One-sixteenth inch above
  2. One-sixteenth inch below
  3. One-eighth inch above
  4. One-eighth inch below
- 4-46. To set the feeding action on a 31-15 sewing machine, you must loosen which of the following screws?
1. Feed dogs setscrew
  2. Feed dog cam fork setscrew
  3. Feed-driving rock shaft crank pinch screw
  4. Feed-driving rock shaft connection pinch screw

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Learning Objective: Recognize the procedures for disassembling and assembling the 111 W 155 sewing machine.

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- 4-47. You may have to grind off the case hardening surface on a sewing machine screw before you can remove it with an easyout.
1. True
  2. False
- 4-48. Which of the following screws has a left-hand thread?
1. Balance wheels retaining screw
  2. Arm shaft connection setscrew
  3. Feed eccentric adjusting screw
  4. Thread take-up lever retaining screw
- 4-49. Which of the following screws is loosened a quarter of an inch and is NOT to be removed when you disassemble the 111 W 155 sewing machine?
1. Presser bar spring setscrew
  2. Presser bar spring support screw
  3. Vibrating presser bar connecting screw
  4. Presser lifting link crank pinch screw
- 4-50. If binding should occur while removing the presser bar, what action should you take?
1. Apply a light oil coating
  2. Turn the presser bar slowly with a back and forth motion
  3. Both 1 and 2 above
  4. Insert a screw driver into the lower slot of the presser bar while applying an upward motion on the presser
- 4-51. When you remove the presser bar, which of the following parts will fall off?
1. Presserbar spring bracket
  2. Releasing bracket
  3. Guide lever
  4. All of the above
- 4-52. Which of the following parts prevents side to side movement of the needlebar rock frame?
1. The needlebar support bracket
  2. The needlebar hinge bracket
  3. The needlebar rock frame position bracket
  4. The needlebar rock frame hinge bracket
- 4-53. Which of the following parts eliminates end play in the balance wheel and arm shaft?
1. Balance wheel adjusting screw
  2. Arm shaft shim
  3. Balance wheel shim
  4. Arm shaft bushing
- 4-54. Which of the following parts transfers the motion from the arm shaft to the needlebar?
1. The needlebar rock stand
  2. The needlebar driving shaft
  3. The needlebar rock shaft
  4. The needlebar driving stud
- 4-55. What is used to remove the needlebar crank friction washer from the sewing machine after you remove the arm shaft?
1. Allen wrench
  2. Needle nose pliers
  3. Index finger
  4. Spanner wrench
- 4-56. Which of the following parts controls the feeding mechanism of the sewing machine?
1. Feed driving eccentric
  2. Safety clutch
  3. Feed lifting eccentric
  4. Feed drive gear
- 4-57. Which of the following parts converts the longitudinal motion of the hook driving shaft to the horizontal motion of the sewing hook?
1. Hook saddle assembly
  2. Hook pinion gear
  3. Hook driving gear
  4. Hook drive eccentric
- 4-58. What part allows the thread to pass between the bobbin case and the throat plate?
1. The bobbin case opener
  2. The thread take-up lever
  3. The thread controller spring
  4. The bobbin case gib

- 4-59. Before reassembling a sewing machine, what do you use to smooth rusty parts?
1. Sand paper
  2. Rubbing compound
  3. Emery paper
  4. Grinding compound
- 4-60. When reassembling a sewing machine, what part should you install first?
1. Arm shaft
  2. Hook drive shaft
  3. Bobbin case opener
  4. Hook saddle assembly
- 4-61. When the bobbin case opener is properly installed, it is in what position?
1. The curved end points toward the bobbin case
  2. The curved end points away from the bobbin case
  3. The blunt end points toward the bobbin case
  4. The blunt end points away from the bobbin case
- 4-62. What total number of spline grooves are on a hook driving shaft?
1. Five
  2. Six
  3. Seven
  4. Eight
- 4-63. On the hook driving shaft, the end with a spline is installed first into the right hook driving shaft bearing.
1. True
  2. False
- 4-64. When you are replacing the feed-driving eccentric, which of the following statements is true?
1. The oiling felt faces down and the crank toward the operator
  2. The oiling felt faces up and the crank toward the operator
  3. The oiling felt faces up and the crank away from the operator
  4. The oiling felt faces down and the crank away from the operator
- 4-65. When you are installing the hook driving shaft lock ratchet, the flange and setscrews face the left of the machine.
1. True
  2. False
- 4-66. Before you insert the needlebar rock frame assembly, the needlebar connecting link must be at its lowest position.
1. True
  2. False
- 4-67. When installing the presser bar into the machine head, you should insert it through the upper bushing about
1. 1 inch
  2. 2 inches
  3. 3 inches
  4. 3 1/2 inches

## Assignment 5

Textbook Assignment: "Aircrew Survival Equipment Training." Pages 5-1 through 5-42.

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<hr/> <p>Learning Objective: Relative to sea survival, recognize the proper survival equipment, use of life preservers and life rafts, and bailout procedures over water using four-line release.</p> <hr/>	
5-1. During the Southeast Asian conflict, what was the average rescue time for a downed aircrewman?	5-6. As a PR, one of your jobs is to teach swimming to aircrewmen.  1. True 2. False
1. 6 hours 2. 8 hours 3. 24 hours 4. 48 hours	5-7. During a survival situation, panic will be your worst enemy.  1. True 2. False
5-2. What is the most important factor in bringing downed aircrewmen home alive?	5-8. The anti-g suit is an excellent flotation device.  1. True 2. False
1. New survival equipment 2. The will of the aircrewman to live 3. Air support for search and rescue (SAR)	5-9. The primary flotation device for an aircrewman flying in a VA type aircraft is which of the following?  1. LPU 2. LPP 3. Mk-2 4. Mk-3C
5-3. Which of the following manuals covers search and rescue (SAR)?	5-10. Which of the following life preservers is used by maintenance personnel?  1. LPU 2. LPP 3. Mk-1 4. Mk-3
1. NAVAIR 13-5-501 2. NAVAIR 13-1-6.2 3. NWP 19-1 4. NWP 13-1	5-11. Which of the following preserver may be used as a substitute for the LPP life preserver?  1. LPU-30/P 2. Mk-3 3. LPU
5-4. Which of the following manuals covers survival techniques?	5-12. Which of the following life preserver is worn by personnel flying ejection-seat-equipped aircraft?  1. LPA-2A 2. LPU-21B/P 3. LPU-24A/P 4. LPP
1. NAVAIR 00-80T-101 2. NAVAIR 00-80T-201 3. NAVAIR 00-80T-501 4. NAVAIR 00-80T-601	
5-5. General information about aircrew personnel protection equipment and training can be found in which of the following manuals?	
1. OPNAV 4790.2B 2. OPNAV 4790.2C 3. OPNAV 3710.7 4. OPNAV 5100	

- 5-13. The FLU-8A/P is installed on which of the following life preservers?
1. LPU-21B/D
  2. LPU-23A/P
  3. LPU-24A/P
  4. Both 2 and 3 above
- 5-14. After life preservers are activated they inflate to their designed shape within what total number of seconds?
1. 10
  2. 20
  3. 30
  4. 60
- 5-15. The LPP life preserver provides the user with a buoyance of how many pounds?
1. 22
  2. 29
  3. 35
  4. 65
- 5-16. The FLU-8A/P will work only in sea water.
1. True
  2. False
- 5-17. The FLU-8A/P system is used as a backup system for the manual release.
1. True
  2. False
- 5-18. Partial inflation of the collar lobe on the LPA and LPU has been a reported problem.
1. True
  2. False
- 5-19. The NB-8 parachute harness is worn over the LPA life preserver.
1. True
  2. False
- 5-20. The four-line release system is designed to reduce oscillation.
1. True
  2. False
- 5-21. The four-line release should NOT be used if your canopy has any evident damage after opening.
1. True
  2. False
- 5-22. It takes approximately how much force to activate the four-line release?
1. 10 pounds
  2. 20 pounds
  3. 30 pounds
  4. 60 pounds
- 5-23. To select the proper life raft for an aircraft, which of the following allowance lists should you use?
1. NAVSUP 101
  2. NAVSUP 2002
  3. NAVAIR 00-35-QA-1
  4. NAVAIR 00-35-QH2
- 5-24. What is the length of an LPI life raft when it is fully deployed?
1. 4 feet
  2. 5 feet
  3. 6 feet
  4. 7 feet
- 5-25. What should you use to right an overturned LR1 life raft?
1. The righting handles on the sides of the raft
  2. The righting lanyard attached to the CO<sub>2</sub> bottle
  3. The boarding handles on the flotation tube
- 5-26. If the life raft is on the crest of a wave, a properly adjusted sea anchor will be in what position?
1. In the trough of the wave
  2. Resting in the wave
  3. 10 feet from the life raft
  4. 12 feet from the life raft
- 5-27. Which of the following life rafts is designed to carry four survivors?
1. LRU-12/A
  2. LRU-13/A
  3. LRU-14/A
  4. LRU-15/A
- 5-28. An LR-12/A life raft has how many separate inflatable compartments?
1. One
  2. Two
  3. Three
  4. Four

- 5-29. Which of the following flotation compartments is/are inflated by CO<sub>2</sub>?
1. Bow
  2. Stern
  3. Both 1 and 2 above
  4. Seat
- 5-30. When using the hand pump to top off the pressure on an LRU-12/A life raft, how far should you open the topping-off valve?
1. 1 turn
  2. 1 1/2 turns
  3. 2 turns
  4. Fully open
- 5-31. If there is a tear in the bow section of an LRU-12/A life raft, what, if anything, would prevent it from sinking?
1. Quick patch kit supplied with the raft
  2. Double lined flotation walls
  3. The internal bulkheads
  4. Nothing
- 5-32. To board the LRU-12/A, which of the following procedures is most correct?
1. Board it from the bow using the boarding line
  2. Board it from the sides using the boarding handles
  3. Board it from the stern using the stirrup
- 5-33. Which of the following life rafts has a circular flotation tube?
1. LRU-12/A
  2. LRU-13/A
  3. LRU-14/A
  4. LRU-15/A
- 5-34. Who has the responsibility for installing the equalizer clamp?
1. First person aboard
  2. Last person aboard
  3. Senior man aboard
- 5-35. What is the purpose of the equalizer clamp?
1. To prevent CO<sub>2</sub> from escaping
  2. To prevent the raft from deflating in the event a hole is present
  3. To prevent overpressurization of flotation tubes
- 5-36. When you are tying three or more LRU-15/A life rafts together, which of the following statements is true?
1. Tie the rafts 180° apart from the pivot raft
  2. Tie all the rafts' bows to the stern
  3. Tie the rafts 50 feet apart
- 5-37. What is the recommended distance between life rafts that are tied together?
1. 8 feet
  2. 25 feet
  3. 50 feet
  4. 100 feet
- 5-38. Never eat any food unless an adequate amount of water is available.
1. True
  2. False
- 5-39. Never tie fish to the side of your raft.
1. True
  2. False
- 5-40. Always secure yourself to your life raft.
1. True
  2. False
- 5-41. In rough seas it is permissible to make a sea anchor out of a signaling panel.
1. True
  2. False
- 5-42. A person can survive without water for what period of time?
1. 12 days
  2. 14 days
  3. 3 days
  4. 6 days
- 5-43. A person can go without food for what period of time?
1. 14 days
  2. 21 days
  3. 30 days
  4. 40 days
- 5-44. When you are rafting ashore in heavy surf, which of the following is a true statement?
1. Tie the sea anchor to the bow
  2. Trail the sea anchor from the stern
  3. Make your landing stern first

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Learning Objective: Identify rescue devices used by aircrewmembers and helicopter rescue. Identify search and rescue (SAR) communication modes.

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- 5-45. Which of the following is the primary rescue device?
1. Rescue hook
  2. Rescue sling
  3. Gated D-ring
- 5-46. At what maximum number of pounds is the smaller hook on the double rescue hook rated?
1. 500 pounds
  2. 1000 pounds
  3. 1500 pounds
  4. 2000 pounds
- 5-47. Which of the following statements concerning the double rescue hook is most correct?
1. Use only the large hook to hoist personnel
  2. Use only the smaller hook to hoist personnel
  3. You can hoist personnel with either hook
- 5-48. As a survivor, why must you never touch any rescue device being lowered from a helicopter until it has touched the water?
1. To prevent electrical chock from static electricity
  2. To prevent development of cramps
  3. To prevent your raft from capsizing
- 5-49. Horse collar is another name for the rescue strop.
1. True
  2. False
- 5-50. A crewman being rescued by a helicopter should assist the helo crew by swinging into the helo feet first.
1. True
  2. False
- 5-51. The forest penetrator top will float only 6 inches out of the water with a flotation collar attached.
1. True
  2. False
- 5-52. To safely use the forest penetrator, the survivor should lower his helmet visor.
1. True
  2. False
- 5-53. If not used properly, which of the following rescue devices is considered the most dangerous?
1. Horse collar
  2. Rescue strop
  3. Forest penetrator
  4. Rescue seat
- 5-54. At 77°F the AN/PRT-5 can operate continuously for how many hours?
1. 24
  2. 36
  3. 48
  4. 72
- 5-55. Which of the following radios is equipped with a flotation device?
1. AN/PRC-90
  2. AN/URT-33
  3. AN/PRT-5
  4. AN/PRC-49
- 5-56. Which of the following radios must you place the ON/OFF switch to read ON to operate the radio?
1. AN/URT-33
  2. AN/PRT-5
  3. AN/PRC-49
- 5-57. The AN/PRC-90 is capable of transmitting up to what total number of nautical miles?
1. 10
  2. 20
  3. 50
  4. 60

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Learning Objective: Relative to land survival, recognize the proper techniques for arctic, desert, and tropical survival.

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- 5-58. During the winter months, which of the following is NOT considered a good shelter in the arctic?
1. Crashed aircraft
  2. Snow cave
  3. Lean-to
- 5-59. What percent of the earth's land surface is desert?
1. One-fifth
  2. One-fourth
  3. One-third
  4. One-half
- 5-60. When your body starts to dehydrate, what is/are the symptom(s)?
1. Lose of appetite
  2. Sleepiness
  3. Nausea
  4. All of the above
- 5-61. At what point of dehydration will you become delirious?
1. 5%
  2. 8%
  3. 10%
  4. In excess of 10%
- 5-62. At what temperature will 15 percent dehydration cause death?
1. 60°F
  2. 70°F
  3. 80°F
  4. 90°F
- 5-63. When you are dehydrated, which of the following is NOT recommended?
1. Drinking plenty of water
  2. Drinking cool water
  3. Drinking warm water
  4. Drinking cold water
- 5-64. When selecting food in a jungle environment, which of the following foods should you avoid?
1. Food that monkeys eat
  2. Slimy skin fish
  3. Fish with scales
- 5-65. Which of the following is a good substitute for soap in a survival situation?
1. Ashes
  2. Sand
  3. Loamy soil
  4. Each of the above
- 5-66. When should you apply a tourniquet?
1. Only when the bleeding is located on an arm
  2. Only when the bleeding is located on a leg
  3. Either 1 or 2 above, depending upon the flow of blood
  4. When it is the only way to stop the bleeding of an extremity
- 5-67. To ease the pain from broken teeth in a survival situation, which of the following remedies should you use?
1. Pull the broken tooth
  2. Apply pine sap to broken teeth
  3. Apply cold compresses
- 5-68. A substitute for aspirin can be made from which of the following?
1. Boiling sassafras tea roots
  2. Boiling oak bark
  3. Boiling willow bark
- 5-69. Which of the following snakes are considered pit vipers?
1. Rattlesnake
  2. Copperheads
  3. Water moccasins
  4. All of the above
- 5-70. Coral snakes can be identified by the colored bands around their body. Which of the following color sequences identify a coral snake?
1. Red, yellow, and black
  2. Red, black, and yellow
  3. Black, yellow, and red
  4. Yellow, red, and black

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Learning Objective: Identify substitute first-aid items and treatment of snake bites?

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5-71. When applying a tourniquet to a snake bite, which of the following methods should you use?

1. Apply it half way between the bite and the heart
2. Apply it 6 inches above the bite
3. Apply it between the bite and the heart, about 2 inches above the bite

5-72. Applying a suction to a snake bite is of little benefit after what maximum period of time?

1. 10 minutes
2. 20 minutes
3. 30 minutes
4. 15 minutes

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72	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
73	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
74	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
75	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THIS FORM MAY BE LOCALLY REPRODUCED





